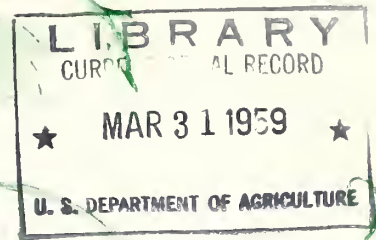


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# UNDERSTORY PLANTS OF BOTTOMLAND FORESTS

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## UNDERSTORY PLANTS OF BOTTOMLAND FORESTS

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The purpose of this manual is to provide foresters and landowners with a quick and simple means of identifying some of the more conspicuous minor plants in the alluvial bottoms of major southern rivers. It is written particularly for the Delta of the Mississippi River, but applies at least in part to the bottoms of the larger streams along the Gulf and Atlantic Coasts from the Carolinas to Texas, as well as to some areas outside the bottomlands.

The species described are those considered by the author to be important in forest management or otherwise conspicuous enough to draw attention. Opinions as to what species should have been included will naturally differ, and it is probable that future revisions will add to the coverage.

Grasses are described first, then forbs, and finally woody plants--vines, shrubs, and small trees. With most species, identification should be possible from the pictures alone, but short written descriptions have also been provided. The range over the eastern United States is given to aid users outside the Delta bottomlands. Within the Delta, the description of the sites on which the species most commonly occur will be helpful in identification.

A glossary defines such botanical terms as seemed necessary to use. Latin and common names for woody plants follow Little's Check List of Native and Naturalized Trees of the United States. Those for all other plants are from Fernald's eighth edition of Gray's Manual of Botany. These and additional publications that were consulted are listed on page 40, but are not otherwise cited.

The author wishes to thank several individuals who assisted with this publication. Dr. W. L. Giles, Superintendent of the Delta Branch of the Mississippi Agricultural Experiment Station, made local identifications of many of the plants, and suggested improvements in the text. Miss Jane W. Roller, U. S. Forest Service, identified all the plants. Dr. J. R. Swallen, U. S. National Museum, and Dr. E. L. Little, Jr., U. S. Forest Service, verified the grasses and woody material, respectively. Dr. S. F. Blake, U. S. Agricultural Research Service, checked the composites, and Dr. F. A. McClure, U. S. National Museum, checked the Arundinaria.

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<sup>1</sup> Stationed at the Delta Research Center, Stoneville, Mississippi. This Center is maintained by the Southern Forest Experiment Station in cooperation with the Mississippi Agricultural Experiment Station and the Southern Hardwood Forest Research Group.



# GIANT CANE

Family Gramineae  
*Arundinaria gigantea*

Leaf



**Description.**--The outstanding characteristics of giant cane are the bamboo-like stems (often used as fishing poles) and the presence of green leaves and twigs the year around on branches of the main stem.

This grass of the bamboo tribe grows in small groups, thickets, or extensive canebrakes. It sprouts from heavily grazed crowns or underground stems. Above-ground stems grow 4 to 30 feet tall. The stems are canes up to 3/4 inch in diameter, with distinct joints 3 to 5 inches or more apart. The parallel-veined leaves occur in fan-shaped clusters of 3 or more at the end of small branches. They are 4 to 11 inches long and 1/2 to 1-1/2 inches wide, tapering to a sharp point. Flowers appear at infrequent intervals on individual plants, the leafless flower stalk arising from the underground stems. The flowering period usually continues for about a year. Flowering stems apparently die after seeding. A smaller and similar species, *Arundinaria tecta*, called switch-cane, growing only 2 to 13 feet tall, may also be encountered.

**Site preference and range.**--Giant cane grows on the lighter soils such as sandy and silt loams. It prefers a moist but well-drained site, and is found on river banks and the borders of sloughs and swamps. It ranges from Florida west to Texas, and north to Maryland and the southern parts of Ohio, Indiana, Illinois, and Missouri.

**Importance in forest management.**--In the understory of established forest stands it does little damage and is good forage for livestock and wildlife. In openings, dense canebrakes may prevent tree reproduction, but in light concentrations the cane frequently acts as a nurse crop. Heavy grazing, repeated burning, or cultivation will control the cane but cannot be used if the desired forest tree reproduction is already present.

Growth habit





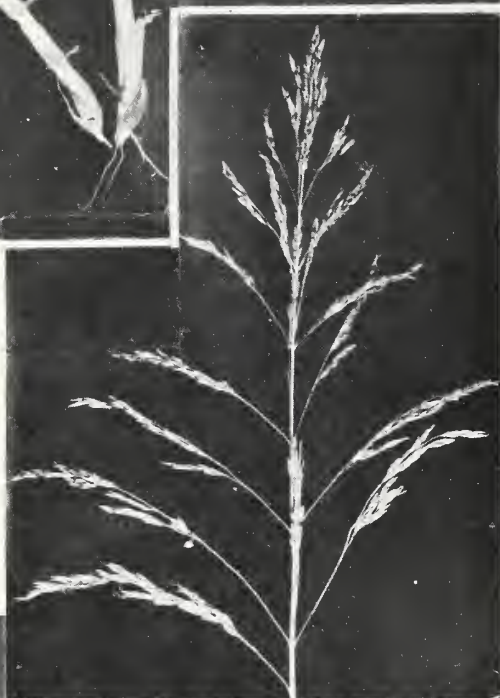
## JOHNSON-GRASS

Family Gramineae  
*Sorghum halepense*

Leaf



Flower



**Description.**--Johnson-grass is among the tallest of the bottomland grasses.

This perennial reaches a height of 9 to 10 feet. It spreads by underground stems that send up shoots, so that it grows in clumps. The light green leaves are 15 to 20 inches long and 4/10 to 8/10 of an inch broad. The flower stalk is 15 to 20 inches long. The flowers are borne in small spikes which, in west-central Mississippi, appear from July through September.

**Site preference and range.**--Johnson-grass grows on any soils except coarse sands and is prevalent in alluvial bottomlands. It is found on practically all sites except those inundated for part of the growing season. It ranges from Florida through Texas to California, north to southern New England, New York, West Virginia, Ohio, Indiana, Illinois, and Iowa.

**Importance in forest management.**--In plantations or on areas to be restocked naturally it is one of the worst weeds encountered, for it begins growth early in the spring and quickly overtops planted seedlings or cuttings and reproduction starting from seed. In an established stand the shade of the tree crowns usually prevents its development. Its value as forage should be recognized where grazing is permitted in mature or near-mature timber stands.

The persistence of the underground stems makes control difficult. Repeated disking or mowing, where possible, can eradicate it in several seasons. The cost of preparing planting sites can often be reduced by growing row crops for several years before planting the trees. The repeated cultivation helps to eradicate the grass. Another possibility is to fallow the land for a year and then plow it several times after midsummer so as to expose the underground roots to the sun.

Growth habit



## COCKLEBUR

Family Compositae  
*Xanthium pensylvanicum*

Leaves

Fruit

**Description.**--The most noticeable feature of cocklebur is its small prickly burs which, in the autumn, adhere to the clothing of persons and coats of animals coming in contact with the plant.

It is a coarse weedy annual with branching stems. Height ranges from 1 to 6 feet. The leaves are roughly heart-shaped and have three lobes. They are 4 to 6 inches long, 2 to 4 inches wide, and are arranged alternately on the stem. The flowers are borne in the leaf axils and are not showy. In west-central Mississippi they appear in midsummer. The fruit is a rough bur, ovoid in shape and

covered with prickles having hooked tips. It is  $\frac{1}{2}$  to  $\frac{3}{4}$  of an inch long and slightly less than  $\frac{1}{2}$ -inch in diameter.

**Site preference and range.**--Cocklebur is most frequently found on rich, moist soils of almost any kind except the coarser sands. Along the Mississippi River levees it is one of the most common plants in the borrow pits. Elsewhere it grows on low areas of waste or cultivated land and roadsides. It ranges from the West Indies to Florida and Mexico, and north to southern Canada, Michigan, Wisconsin, Minnesota, and Nebraska.

**Importance in forest management.**--Cocklebur does no harm in established stands but interferes with tree seedlings on open areas. Thick stands on the river fronts often prevent cottonwood and willow seed from reaching mineral soil and shade out seedlings that do start.

Control in forest plantations is probably best obtained by disking between rows until the trees outgrow the cocklebur plants. Fire can be used to destroy the plants and seed on areas in need of restocking, but the weed is most prevalent where flooding is frequent, and a new supply of seed may be brought in before trees become established.



## DAYFLOWER

Family Commelinaceae  
*Commelina virginica*

Fructing stem

**Description.**--The dayflower is a slender perennial 1-1/2 to 4-1/2 feet tall, whose propagation is aided by strong, creeping and forking underground stems. The parallel-veined leaves, which contract at the base to form a sheathing petiole around the

Seeds



stem, are lanceolate to linear in shape and light green in color. They are from 4 to 8 inches long and 1 to 2 inches wide. The leaf adjacent to the flower is heart-shaped and folded together to form an enclosure for the blossom. The flowers, which are blue and about 1/2-inch across, bloom all summer. The fruit is a small capsule containing three to several seeds that ripen throughout the summer.

Growth habit

**Site preference and range.**--Dayflower is found most often on heavy clay soils in damp, fertile woods and along watercourses. On the floodplains of the Mississippi River and its tributaries the presence of this plant is a fair indication that the site is under standing water at some time during the year. It occurs from New York south to Florida and west to Michigan, Kansas, and Texas.

**Importance in forest management.**--This plant is troublesome chiefly on areas in need of restocking. The thick mass of underground stems interferes with the root development of tree seedlings, and the dense, low shade of the plants prevents germination of tree seeds or smothers the seedlings. The very wet sites complicate the problem of control; at present no recommendations can be made.



## YELLOW DOCK

Family Polygonaceae  
*Rumex crispus*

Young plant



**Description.**--Yellow dock is one of the commonest weeds in the bottom-lands. It is a perennial that grows from 3 to 5 feet tall and has a deep taproot. The stems arise from the taproot and from last year's basal rosette of leaves. The alternate, simple leaves are dark green with wavy-curved margins. They vary from 3 to 12 inches long but are only 1/2 to 2 inches wide. The light green flowers appear

during late spring in west-central Mississippi. They are borne on a single stalk, where they are interspersed with leaves except toward the tip. The fruit is a valve 1/10 to 1/5 inch in diameter bearing a single achene; it is brown when mature. Other species of dock may be encountered but all are similar in form and growth habit.

**Site preference and range.**--Because of its deep root system, dock readily adapts itself to a variety of soils and sites. It is most common on the heavier clays and moist to wet sites on cultivated land, abandoned fields, and open places in the woods. It ranges throughout central and eastern United States.

**Importance in forest management.**--The shade produced by clumps of these plants prevents the germination of seed and the development of very young seedlings. Once the trees are 5 or 6 feet tall, they soon shade out the dock.

This weed sprouts vigorously from the root. Repeated disking will keep it down in plantations. Eradication by digging is sometimes practiced in agricultural lands but is hardly economical in silvicultural practice. Fairly good results have been obtained by applying 2,4-D spray or dust to the stem at ground level and to the newly forming leaves.

Fruiting branch





## GOLDENROD

Family Compositae  
*Solidago altissima*

**Description.**--Goldenrod is most conspicuous for its yellow flowers.

There are many species, all similar in appearance to the one pictured here. This coarse-textured perennial is 2 to 6 feet tall. The stems are grayish and covered with numerous short hairs. The leaves, 2 to 5 inches long and 4/10 to 8/10 inch wide, are medium-green on top and lighter, almost gray, on the underside. They are sessile, and are crowded along the stem. Bright yellow flowers, appearing between August and November in west-central Mississippi, are borne in irregular compound heads. The fruit is an inconspicuous achene.

**Site preference and range.**--Goldenrod occurs on a wide variety of soils and on both dry and moist sites. It develops best in woods clearings, abandoned fields, and on roadsides, seldom being found in shady places. Its range is from Florida to Texas, and north to Canada.

**Importance in forest management.**--Goldenrod interferes with tree reproduction, but is not important after trees reach heights of six feet or more. Becoming established in mid-summer, it develops in thickets and often outgrows and shades out tree seedlings.

Disking controls it in young plantations but no method is known for areas of natural regeneration. Chemical control has not been satisfactory, for the chemicals must be applied late in the season, when they also damage or kill the trees.

*Stem with fruit and flowers*



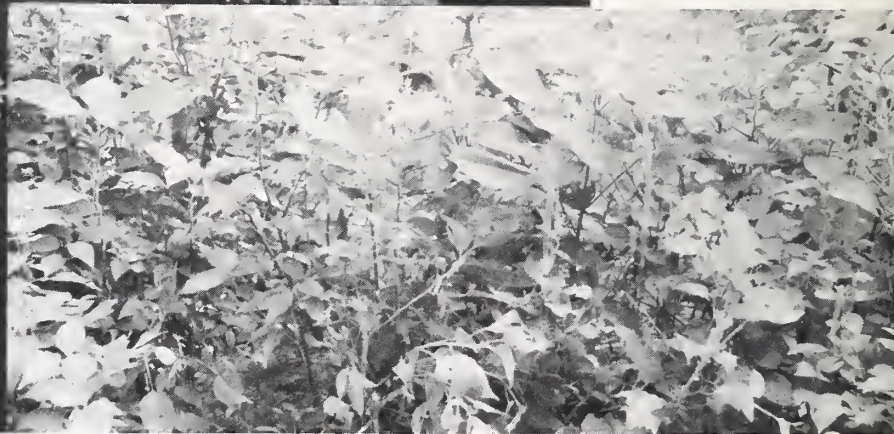


# STINGING NETTLE

Family Euphorbiaceae  
*Tragia urticifolia*



Growth habit



**Description.**--Stinging nettle, locally called bull nettle, is known for the stiff, stinging hairs that cover the stem and leaves.

This perennial herb grows in clumps and attains a height of 2 to 4 feet. The dark green leaves are ovate-lanceolate, coarsely cut-toothed, and 5 to 6 inches long by 2 to 3 inches wide. Small, inconspicuous, greenish-white flowers are borne on stalks 2 to 3 inches long. In west-central Mississippi they appear from June to September. The fruit is a capsule 2/10 to 4/10 inch wide.

**Site preference and range.**--Stinging nettle grows on the lighter textured sandy soils. It prefers well-

drained to dry sites like the ridges, drainage course banks, and high flats in the Mississippi River bottomlands. Its range is from Florida to Arizona, north to Virginia, Missouri, Kansas, and Colorado.

**Importance in forest management.**--Except for the discomfort experienced by persons who touch its stinging hairs, nettle does little harm in established stands. When growing in dense clumps on areas in need of restocking, it may prevent tree species from becoming established.

No specific controls have been tried, but repeated cultivation, until the trees outgrow the competition, should prove effective.

## POKE

Family Phytolaccaceae  
*Phytolacca americana*



*Flowering branch  
with fruit*

**Description.**--Its clusters of dark purple berries are poke's most noticeable feature.

This stout perennial herb, often called pokeweed, grows 6 to 10 feet tall. At maturity the rind of the stem is a rich purple. It has a rather unpleasant odor and a very large poisonous root often 4 to 6 inches in diameter. The young leafy sprouts are used as greens. The leaves are alternate, lanceolate, and entire, and are 3 to 5 inches long by 1 to 2 inches wide. The white or pinkish flowers, on elongated stalks opposite the leaves, appear from July to September in west-central Mississippi. The fruit is a berry  $\frac{3}{10}$  to  $\frac{4}{10}$  of an inch in diameter, containing 5 to 12 seeds.

**Site preference and range.**--Poke will grow in all kinds of soil if light is abundant. It prefers low moist sites and often develops after overflow waters have receded. Its range is from Florida to Texas, and north to Canada.

**Importance in forest management.**--On areas in need of regeneration poke often forms dense stands that produce heavy low shade and considerable root competition for desirable tree reproduction. Trees an inch or more in d.b.h. or 4 to 6 feet tall are rarely affected. Repeated cultivation, until the trees outgrow the weed, is the most effective control.



## PRAIRIE-MIMOSA

Family Leguminosae  
*Desmanthus illinoensis*



Fruiting branch  
with leaves

Growth habit



**Description.**--This herbaceous perennial has leaves resembling in miniature those of the mimosa tree.

Height varies from 1 to 8 feet. The very delicate leaves, 2 to 3 inches long, are twice pinnate with 6 to 15 pairs of pinnae and 20 to 30 pairs of leaflets on each pinna. Small, greenish-white, inconspicuous flowers appear from June through August. The fruit is a legume  $\frac{1}{2}$  to 1 inch long and  $\frac{1}{8}$  to  $\frac{3}{16}$  of an inch wide. The numerous pods, each containing 2 to 6 seeds, are borne in dense globose heads.

**Site preference and range.**--Prairie-mimosa prefers moist but not extremely wet sites on alluvial soils of almost any type except the coarser sands. It grows principally in openings where there is an abundance of light. It is associated with a wide variety of herbaceous plants and vines. It ranges from Alabama to Texas, north to North Dakota, and east through Minnesota, Illinois, and Ohio.

**Importance in forest management.**--Although prairie-mimosa is not usually troublesome by itself, the complex with which it is often associated produces a low shade that interferes with natural reproduction. When vines are present, they climb over the other plants, forming a mat that often deforms young trees.

Control by disking is probably the most practical method.

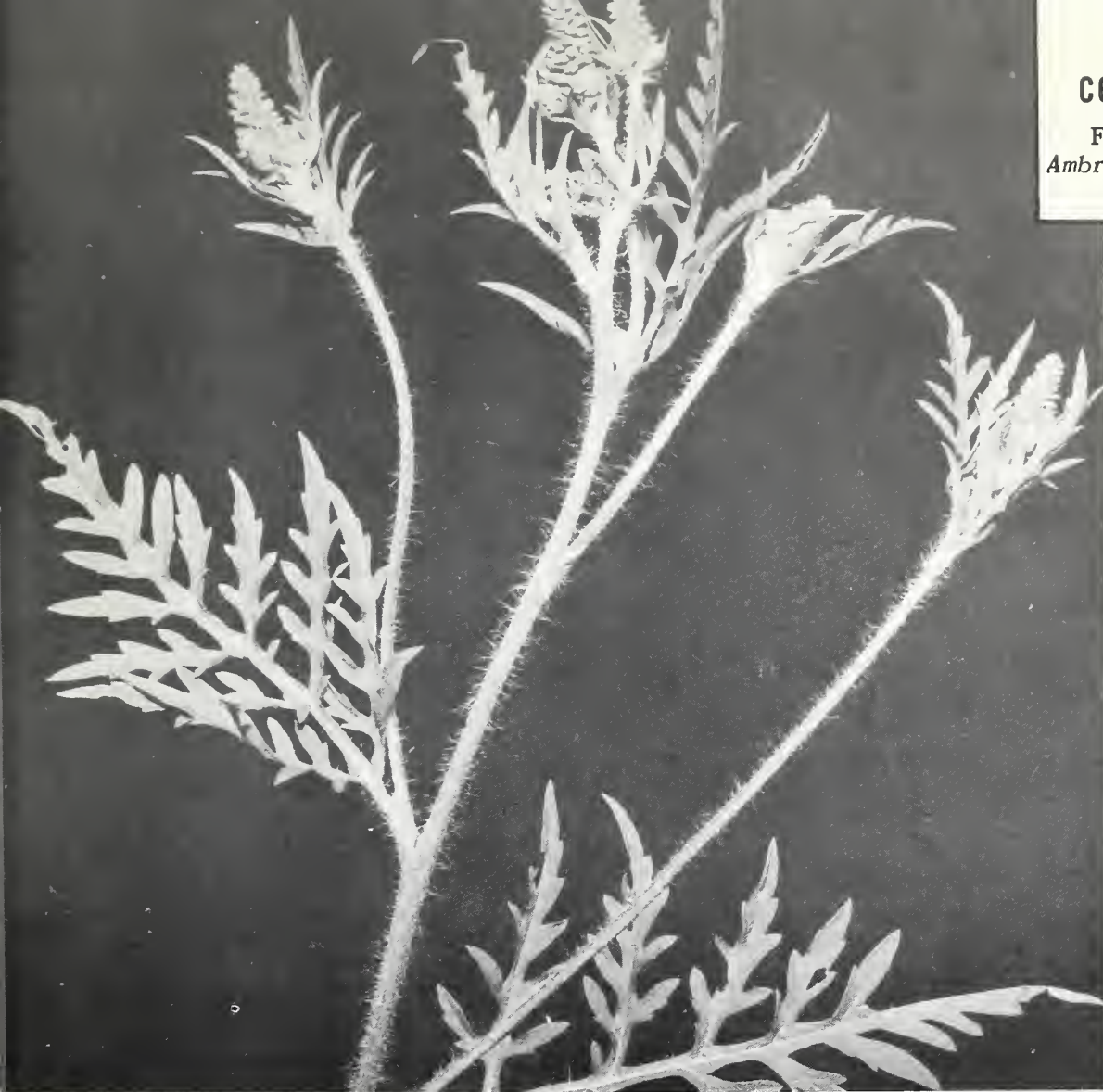


Seed pod



## COMMON RAGWEED

Family Compositae  
*Ambrosia artemisiifolia*



*Flowering stem*

**Description.**--Ragweed is probably best known for its pollen, which is an important cause of hay-fever.

It is a very common late-summer annual which attains heights of 2/3 to 8 feet. It is much branched, with dull green leaves mostly alternate and pinnately lobed. The greenish flowers, which appear in late summer in west-central Mississippi, are inconspicuous and borne in the leaf axils. When mature, the seed-bearing stems are about 2 to 3 inches long. The fruit is an ovoid achene about 1/10 to 2/10 of an inch long. Several species in the genus are markedly similar.

**Site preference and range.**--Ragweed seems to have no particular soil preference but is not usually found on the wetter sites. It requires con-

siderable light and seeds in on abandoned fields and open areas in the woods, and along logging roads. Considering all species, its range includes the entire eastern United States.

**Importance in forest management.**--Ragweed does little harm in fully stocked forests. Sparse stands may act as a nurse-crop for tree seedlings. When it grows densely, however, it shades out reproduction; it has caused considerable mortality in first-year cottonwood plantations established from cuttings.

Cultivation can control the weed, but may have to be repeated several times, for the seed is transported by water and reinfestation can easily occur. Eradication in stands of natural reproduction is not practical.

## SUMPWEED

Family Compositae

*Iva ciliata*

**Description.**--This plant is a coarse, rough, hairy annual 1 to 6 feet tall. The leaves are thick, ovate, pointed, coarsely toothed, and downy on the underside. They vary from 1-1/2 to 4 inches long and 1/2 to 1-1/4 inches in width. The greenish-white flowers, which appear from July to October in west-central Mississippi, are crowded on spikes 1-1/2 to 1-3/4 inches long in the leaf axils. The fruit is a small achene.

**Site preference and range.**--Sumpweed grows on all but the sandiest soils. It prefers moist sites. In the Mississippi River bottomlands it is very abundant on the alluvial soils in borrow pits and other open places along the levees and in the woods. Its range is from Indiana to Nebraska, south to Louisiana, Texas, and New Mexico.

**Importance in forest management.**--On open areas thick stands of sumpweed may shade out young reproduction and the almost solid cover of leaves prevents much of the seed of light-seeded species, such as cottonwood or willow, from reaching the ground. Once the trees have asserted dominance no further damage is done.

Cultivation will keep sumpweed out of plantations, but controls for use in stands of natural regeneration are unknown.



*Growth habit*

*Flowering stalk*



## BLACKBERRY

Family Rosaceae  
*Rubus* sp.



*Stem and leaves*

**Description.**--The blackberries are well known for the strong prickles on their canes, and for their fruit.

The genus contains a large number of species that are difficult to distinguish, but since positive identification is rarely necessary in forest management, separation into two easily recognized groups is adequate. These groups are (1) blackberries, plants with erect stems; and (2) dewberries, plants with stems that trail on the ground. Blackberries have erect, stout, ridged canes 4 to 8 feet tall. They are perennial, and new canes are produced each year by the rootstocks. The canes, leaf petioles, and in some species the mid-rib of the leaves are armed with sharp prickles. The compound leaves are alternate and 3 to 5 inches long and wide, the leaflets usually having finely serrate margins. They are prominently veined, dark green above and lighter green to grayish beneath. The flowers are white and numerous, appearing from May through June in west-central Mississippi. The fruit is a collection of black drupelets varying in size with the species.

**Site preference and range.**--Blackberries are found on all but the wettest sites. They prefer moist but well-drained situations with an abundance of light, and are common in old fields and openings in the woods. They are one of the first plants to become established on burned-over areas. Considering all species, blackberries are found throughout the eastern United States.

**Importance in forest management.**--Although blackberry briars frequently form dense thickets they are probably less of a hindrance to tree reproduction than most other weeds. Their shade, while insufficient to inhibit the growth of tree seedlings, reduces soil temperatures and helps to conserve moisture. When other vines climb into and over the briars, however, competition with tree seedlings may become a problem. In plantations, briars can be controlled by disking. Before they are destroyed, "briar patches" should always be checked to be certain they do not contain advanced tree reproduction.



## DEWBERRY

Family Rosaceae  
*Rubus* sp.

### Leaves

**Description.**--In contrast to blackberries, dewberries have trailing or low-arching vines.

Their slender, tough canes are usually tip-rooting. They are perennial and new canes are produced each year. The first-year canes and usually the older ones have hairy bristles along the stem and on the leaf petioles between the numerous strong prickles. The compound leaves have five somewhat evergreen leaflets 1-1/2 to 3 inches long and 1/2 to 1 inch wide. The white flowers are numerous and appear during April and May in west-central Mississippi. The fruit is a collection of black drupelets about 1/2 to 3/4 of an inch long. The genus contains many species, but species identification is rarely important in forest management.

**Site preference and range.**--Dewberries occur on a variety of soils, usually on well-drained sites. In the Mississippi River bottomlands they flourish in the batture (lands lying between the levees and the river), growing either in full light or under the high shade of somewhat open stands of timber. They range from Florida to Texas and north to Maryland, Missouri, and Oklahoma.

**Importance in forest management.**--Except when they climb over other plants dewberries rarely form dense thickets. They are thus usually less of a hindrance to tree reproduction than most other weeds, and they sometimes act as a nurse crop for tree seedlings. They are reported to provide good grazing for cattle and wildlife.

**Control,** although rarely necessary, is probably easiest to obtain by disking.



Flowers

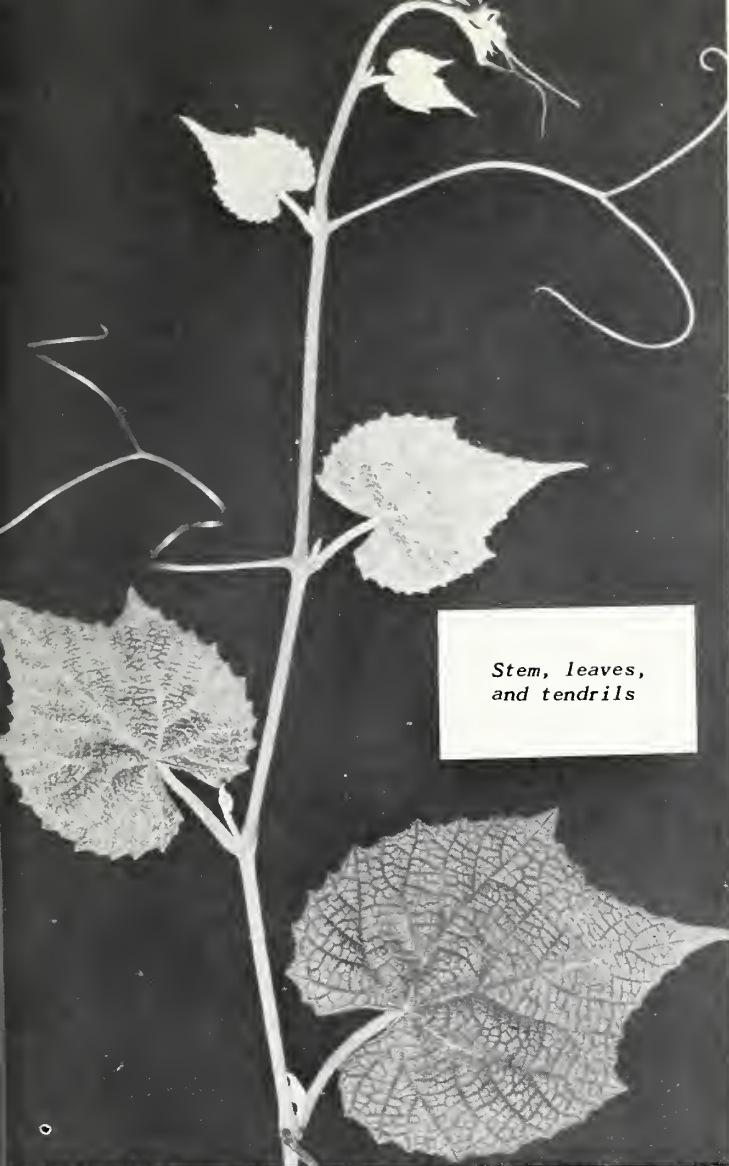


Berries



## GRAPE

Family Vitaceae  
*Vitis* sp.



Stem, leaves,  
and tendrils



**Description.**--Wild grapes are quickly identified by their leaves, which closely resemble those of the cultivated varieties.

The grapes are chiefly perennial vines that climb by the coiling of naked-tipped tendrils. The graybark or pigeon grape is used here as an example, but other species bear a strong family resemblance. The bark of the main stem and branches sheds off after the first year. The leaves are 2-1/4 to 5-3/4 inches broad, ovate, with prolonged tips, either unlobed or with short shoulders. Wool-like hair, covers the upper and lower surfaces. Flower clusters, 2 to 6 inches long, appear in June and early July in west-central Mississippi. The fruit is a blackish berry 2/10 to 4/10 inch in diameter, containing seeds 1/10 to 2/10 inch long.

**Site preference and range.**--Grapes are found on almost any soil but usually prefer moist sites along rivers and sloughs and in alluvial bottoms. Their range is the entire eastern United States, with the graybark grape occurring from Florida to eastern Texas, and north to southeastern Virginia, southern Ohio, Illinois, and Nebraska.

**Importance in forest management.**--Trees of sapling size or larger are frequently deformed or broken by the weight of grapevines. The tops of older trees, when burdened with vines, are badly damaged in sleet storms accompanied by wind. Young vines sometimes form a dense canopy by climbing over low shrubs, to the detriment of tree reproduction. Grapes are a valuable cattle and wildlife food and this utility may at times exceed the damage they do in timber stands.

Control of larger vines can be accomplished by cutting with an ax and applying a 2,4,5-T solution to prevent sprouting.

Growth habit

## COMMON GREENBRIER

Family Liliaceae  
*Smilax rotundifolia*

**Description.**--The greenbrier (or smilax) is notable for its tough, green, climbing stem, usually with stout flattened prickles.

This perennial woody vine, of which there are several species, climbs by means of tendrils and frequently reaches high into the crowns of trees. The vines arise from long slender underground stems. The leaves are ovate to nearly round, bright shiny green on both sides and 1-3/4 to 4 inches long and wide. The flower stalks are about 1 inch long and the inconspicuous greenish to bronze flowers appear from late April to June in west-central Mississippi. The fruit usually is a blue-black berry about 2/10 of an inch in diameter, with 2 seeds. It is borne in small clusters. In one species it is brilliant red.

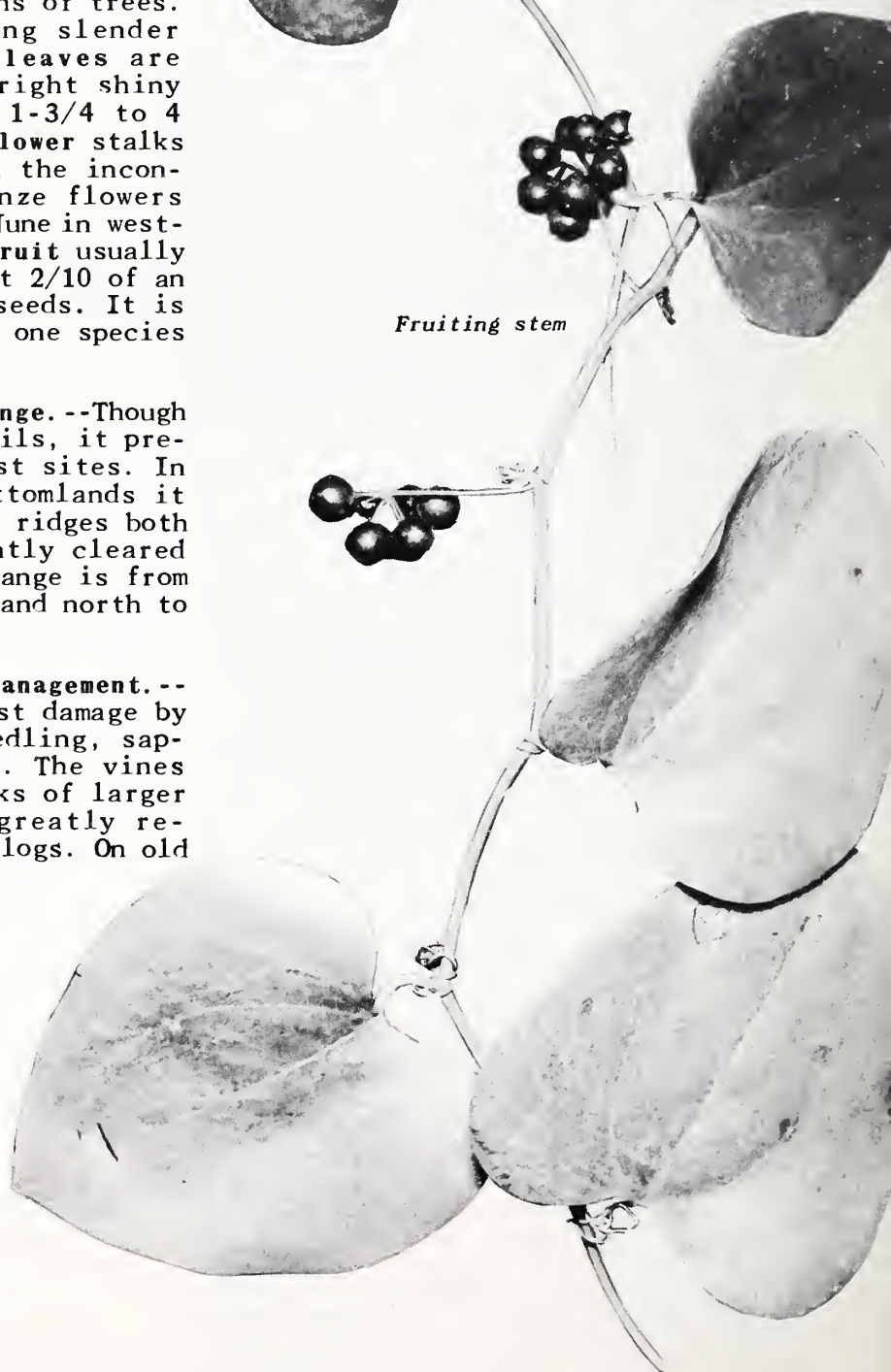
**Site preference and range.**--Though greenbrier grows on all soils, it prefers well-drained but moist sites. In the Mississippi River bottomlands it is common on the flats and ridges both in the woods and in recently cleared or abandoned fields. Its range is from Florida to eastern Texas, and north to Canada.

**Importance in forest management.**--This vine does its greatest damage by deforming or breaking seedling, sapling, or pole-size trees. The vines also twist about the trunks of larger trees, killing them or greatly reducing the quality of the logs. On old fields, these vines often form rather dense thickets which greatly reduce the accessibility of the area. Cattle and wildlife graze on the new growth in the spring. No practical controls are known.

Stem



Fruiting stem





## JAPANESE HONEYSUCKLE

Family Caprifoliaceae  
*Lonicera japonica*

Fruiting branch

**Description.**--Its very fragrant, early spring flowers are the outstanding feature of Japanese honeysuckle.

This perennial high-twining or trailing vine has short-petioled, entire, ovate or oblong green leaves varying from 1 to 2 inches long by 1/2 to 3/4 inch wide. The new flowers are white or white tinged with purple, turning yellow with age, and 1 to 1-1/2 inches long. The fruit is a several-seeded black berry about 1/4 inch in diameter.

**Site preference and range.**--Honeysuckle is found on light soils with good drainage but abundant moisture. In the Mississippi River bottomlands it frequently occurs on the ridges and high flats. It ranges throughout the eastern United States.

**Importance in forest management.**--This plant is a pernicious weed both in the open and in timber stands. It climbs into larger trees and spreads over the low-growing plants, smothering and strangling them. Trees up to six inches d.b.h. have been killed. Tree reproduction is deformed or killed and new seedlings are unable to get started. No entirely satisfactory control has been found. Foliage sprays with 2,4-D and 2,4,5-T have some promise, but at least two applications are needed and the cost is high. Small patches of honeysuckle have been controlled by mulching with a 2-inch layer of sawdust.

In the spring livestock and wildlife graze the vine.

## LADIES'-EARDROPS

Family Polygonaceae  
*Brunnichia cirrhosa*

*Stem, leaves, and tendrils*

**Description.**--Ladies'-eardrops, also called redvine, is a climbing vine with a woody stem up to  $\frac{3}{4}$  of an inch in diameter at the base. It climbs by means of tendrils from the ends of the branches. The alternate leaves are simple, ovate, entire, and from 2 to 4 inches long by  $\frac{3}{4}$  to 2 inches wide. The inconspicuous greenish flowers are borne in clusters crowded on axillary or terminal stalks; there are 2 to 5 flowers in a cluster. The fruit is a small achene.

**Site preference and range.**--This plant grows on all except the very sandy soils. It prefers moist sites, being very common along river and slough margins and on the low flats in the backwater area of the lower Mississippi River valley. Its range is from Florida to Texas, and north to South Carolina, western Kentucky, southern Illinois, and Oklahoma.

**Importance in forest management.**--It is very tolerant of shade and persists but does not flourish under fully stocked stands. When given sufficient light, it climbs over other weeds and shrubs, forming dense mats that interfere with tree reproduction.

Repeated cultivation until the trees outgrow the competition controls the vine in plantations, but no practical method is known for areas being restocked naturally.



*Growth habit*





*Fruiting stem*

## RED-BERRIED MOONSEED

Family Menispermaceae  
*Cocculus carolinus*

**Description.** -- This perennial woody vine has triangular to heart-shaped leaves and red berries.

It wraps itself around any available vegetation and climbs to considerable heights in trees and shrubs. The leaves are oval, heart-shaped or arrow-like, and downy beneath. They are 2 to 3 inches long and 1-1/2 to 2 inches wide. Inconspicuous greenish flowers appear in July and August in west-central Mississippi. The fruit is a red drupe about 1/4 inch in diameter.

**Site preference and range.** -- Red-berried moonseed grows on almost any soil or site. In the Mississippi River bottomlands it is most prevalent on the heavier, well-drained soils which have ample moisture during the growing season. Its range is from Florida to Texas, and north to southeastern Virginia, southern Illinois, and southeastern Kansas.

**Importance in forest management.** -- This vine is most damaging in young stands when climbing in and over reproduction or saplings, which it sometimes breaks or deforms. When wrapped around the stems it may kill by cutting through the cambium layer. It rarely, if ever, prevents the establishment of tree reproduction. If the stems are numerous they interfere with travel through the woods. Control is difficult except where diskings is possible. A closed tree canopy usually holds the vine in check.



*Fruit*



*Leaf variations*

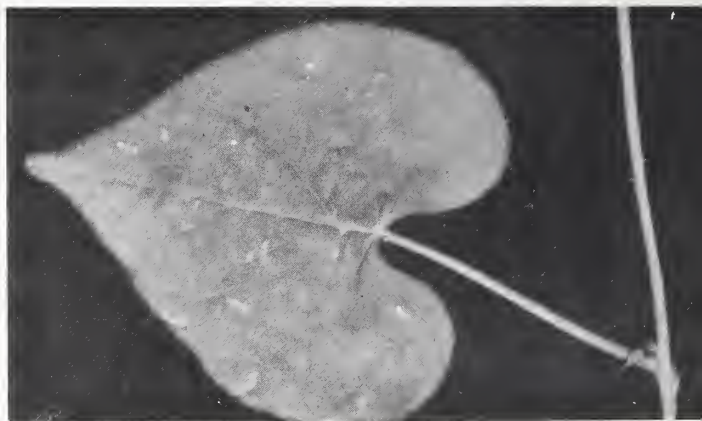
## MORNING-GLORY

Family Convolvulaceae  
*Ipomoea* sp.

*Stem, leaves,  
and flower*



*Leaf variation*



**Description.**--The morning glories are notable for their bright, trumpet-shaped blossoms, the color varying with the species.

These vines comprise a large and complex genus, but since the species resemble each other in growth habits, appearance, and importance in the forest it is unnecessary to distinguish them here. They are twining annuals that climb over any low ground cover. Quite frequently they form dense mats by intertwinning with other vegetation. The leaves are generally heart-shaped and 1-1/2 to 2 inches long and wide. The flowers are short-stemmed and only about 1-1/2 inches long but very showy. They appear from July to October in west-central Mississippi.

**Site preference and range.**--Morning glories are restricted to the lighter and better drained soils such as sandy or silt loams. They are most common in cultivated or abandoned fields, along roadsides, or in openings in the woods where light is abundant. The range including all species covers the entire eastern United States.

**Importance in forest management.**--In forest management these vines are most important on areas in need of natural regeneration or in plantations during the first year or two. On small areas, and in combination with other weeds and shrubs, they frequently produce a heavy mat of stems and leaves that impedes and deforms young reproduction. In first-year plantations of hardwoods morning glories sometimes deform or kill small trees by climbing into the crowns.

Control is not difficult if repeated cultivation is possible. Cutting the vines by hand with a hoe or ditch bank blade may be feasible on small areas or for occasional trees. No satisfactory measure is available in natural stands of young reproduction.





*Fruiting branch*

## PEPPER-VINE

Family Vitaceae  
*Ampelopsis arborea*

**Description.** -- Pepper-vine, often called buckvine, is one of the worst weeds in the bottomlands. This vine has a woody stem with close bark. It grows either erect and bushy or climbing over other plants. The leaves are alternate, twice pinnate, and 3 to 5 inches long, with individual pinnae 1 to 1-1/4 inches long. They have cut-toothed margins and are a shiny dark green when mature. New growth is frequently reddish. Tendrils or flower stalks, where present, appear opposite the leaves. The inconspicuous, light green flowers bloom from June to August in west-central Mississippi. The fruit is a black, spherical berry 1/4 to 3/8 of an inch in diameter and is borne in a spreading head.

**Site preference and range.** -- Pepper-vine grows on a variety of soils but is more common and usually develops best on the heavier soils. In alluvial areas it prefers the low flats and the margins of small watercourses, but it will also grow on rather dry ridges. It ranges from Florida to Texas and north to eastern Maryland, southern Illinois, Missouri, and Oklahoma.

**Importance in forest management.** -- Pepper-vine is very tolerant of shade and survives for years under stands having a closed crown canopy. When openings occur its growth is greatly stimulated, and it forms dense, nearly impenetrable, waist-deep tangles of stems in which tree seedlings can rarely develop.

Elimination of established pepper-vine areas is difficult. Clearing with a bulldozer followed by disking to keep down the sprouts has been the most successful method, though rather costly. Chemical treatment has been unsatisfactory and burning causes prolific sprouting.



*Stem with leaves and tendrils*



## POISON IVY

Family Anacardiaceae  
*Rhus radicans*

Ripe fruit



**Description.**--Poison ivy is a slender shrub or climbing vine with shiny, attractive leaves, each with three leaflets resembling those of boxelder.

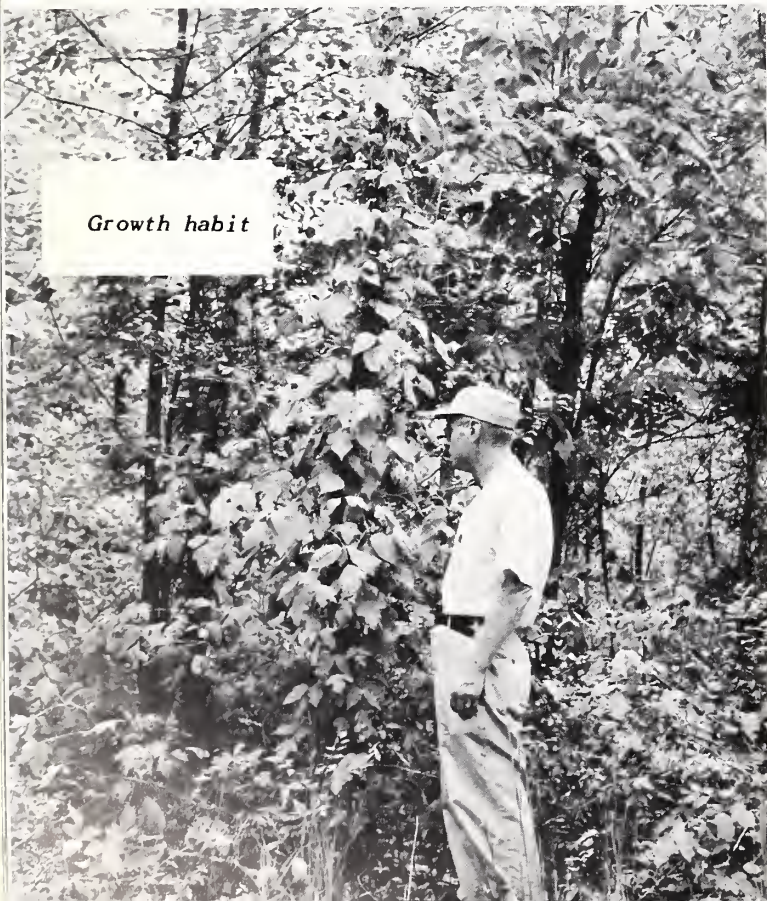
It is characteristically a vine and climbs by means of aerial roots. Older stems are woody, brownish-gray to dark brown; they frequently grow to three inches or more in diameter. When without other plants on which to climb, poison ivy may stand upright or trail over the ground. The leaves are 3 to 12 inches long and compound, with 3 leaflets whose margins may be entire or variously toothed. The leaf surface varies from smooth and shiny to somewhat hairy and dull. Arrangement on the stem is alternate. The small greenish-white flowers, appearing in June-July in west-central Mississippi, are clustered and rather inconspicuous. The fruit is a gray-white fleshy drupe almost spherical and about 1/4 inch in diameter.



**Site preference and range.**--Poison ivy grows in almost all soils and on practically all sites except those inundated for a major portion of the year. In alluvial bottomlands as many as 70 thousand stems per acre have been recorded. It is commonly found in thickets, open woods, rocky areas, and in fence rows, where the seed is deposited by birds. It ranges throughout the eastern United States.

**Importance in forest management.**--Where this plant occurs in extremely heavy concentrations on the ground, young trees may be crowded or shaded out, but such damage is not usual. More often small trees are deformed or broken down by the weight of the vines in their crowns. The tops of older trees, when burdened with vines, are badly damaged in sleet storms accompanied by wind. The skin irritation resulting from contact with the sap is another serious objection to the plant. Widespread control is probably impractical in the woods. On planting areas, disking will keep it in check. Spraying the foliage with a 32.5 percent solution of ammonium sulfamate kills the vine but also affects tree reproduction. Vines in large trees can be cut with an ax and treated with chemicals to prevent sprouting.

Growth habit





**SUPPLE-JACK**Family Rhamnaceae  
*Berchemia scandens*

**Description.**--Supple-jack, sometimes called rattan-vine, has shiny leaves with prominent parallel veins.

This perennial high-climbing vine twines about the trunks and crowns of trees and shrubs. The upper stem develops many fine, supple branches. After the first year the stems become woody and dark green, the older ones bearing prominent white streaks. The parallel-veined leaves are alternate, oblong-ovate, with a slightly wavy margin. They are 2-1/2 to 3 inches long by 1 to 1-1/4 inches wide. The small greenish-white flowers are inconspicuous; they appear in May in west-central Mississippi. The fruit is a blue drupe about 3/10 of an inch long. The leaves, flowers, and fruit are often high in trees.

Vine and  
leaves



**Site preference and range.**--Supple-jack occurs on all except very sandy soils, but prefers moist to wet sites. It tolerates shade and thrives even under fully stocked stands. Its range is from Florida to Texas, and north to Virginia, Tennessee, and southern Missouri.

**Importance in forest management.**--By twisting around and strangling the trees on which it climbs, this vine either kills them or greatly reduces the quality of the logs. Older vines may be cut, and possibly treated with chemicals to prevent sprouting.



# TRUMPET-CREEPER

Family Bignoniaceae  
*Campsis radicans*

Flowering branch

**Description.**--The most noticeable features of trumpet-creeper, sometimes called cow-itch, are the bright orange funnel-shaped flowers in summer and the large seed pods in the fall.

This perennial, woody vine climbs to considerable heights by means of aerial rootlets. It also pushes out over low plants to form dense masses. It is frequently confused with pepper-vine and patches of either vine or combinations of the two are locally called buckvine areas. The pinnately compound leaves are opposite, light green, and from 3 to 6 inches long. There are 9 to 11 ovate, pointed, slightly toothed leaflets 1-1/4 to 2 inches in length by 1/2 to 3/4 inch wide. The conspicuous orange to scarlet flowers, 2-1/4 to 3 inches long, appear from June through September in west-central Mississippi. The fruit is a large dry pod 4 to 8 inches long by 3/4 inch in diameter and containing many large flat-winged seeds.

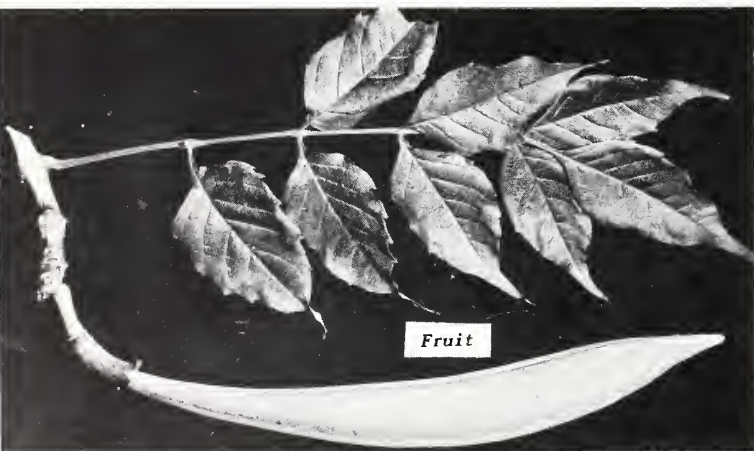


**Importance in forest management.**--Trumpet-creeper survives but does not flourish under fully stocked timber stands. With abundant light--as in old fields or openings in the woods caused by heavy cutting or repeated fires--this vine by itself or intertwined with other vegetation forms dense mats through which it is almost impossible for natural or planted tree seedlings to force their way.

Elimination of established trumpet-creeper thickets is difficult. Clearing with a bulldozer and then disking repeatedly to keep down sprouts has been the most successful method, though rather costly. Chemical treatment has been unsatisfactory and burning causes prolific sprouting.

**Site preference and range.**--Trumpet-creeper grows on any soil but is most common on those of heavier texture. In the Mississippi River bottomlands it is almost universally present on the better-drained flats and moist ridges but not in the sloughs or other very wet locations. Its range is from Florida to Texas, and north to southern Iowa and New Jersey.

Growth habit





## WILD BEAN

Family Leguminosae

*Apios americana*



Fruit

**Description.**--The wild bean or groundnut is conspicuous for its attractive purplish or mauve flowers.

It is a perennial vine that twines about and climbs over low plants and bushes. Tuberous enlargements at regular intervals make the roots resemble a string of beads. The compound leaves are light green, 6 to 7 inches long. There are 3 to 9 ovate-lanceolate leaflets 1-3/4 to 3 inches long by 3/4 to 1-1/2 inches wide. The flowers are crowded on a stalk 1-1/4 to 6-1/2 inches long; they appear from July through September in west-central Mississippi. The fruit is a straight or slightly curved, many-seeded legume about 1 inch long.

**Site preference and range.**--Wild bean grows on practically all types of soil except dry sands, but it prefers well-drained sites with abundant moisture. In the bottomlands it occurs on the better drained portions of flats and on ridges. Its range is from the Gulf Coast to Canada, and as far west as Colorado.

**Importance in forest management.**--It does little damage in well-stocked forests. In abandoned fields or open areas it forms a dense mat by intertwining with other ground cover. Such mats frequently prevent seedlings from getting started and deform or break small trees.

No practical controls are known for use in areas of natural reproduction. Inplantations repeated cultivation until the trees outgrow the competition is often worthwhile.



Flowering stem

## COMMON BUTTONBUSH

Family Rubiaceae

*Cephalanthus occidentalis*

**Description.**--The outstanding features of buttonbush are its prominent white flowers borne in spherical heads and its occurrence on very wet sites.

This plant, though usually a shrub not over 15 to 20 feet tall, occasionally attains tree form with heights of 40 to 50 feet and diameters as large as 1 foot. The trunk may be free of limbs for 15 or 20 feet before dividing into a spreading crown. The bark of large trees is gray-brown to nearly black and deeply fissured into broad flat ridges. The prominently veined, dark-green leaves are opposite or in whorls of three, with lighter under surfaces. They are 4 to 6 inches long and 2 to 4 inches wide. Small white flowers are massed in globose clusters 1 to 1-1/2 inches in diameter. Late June through July is blossoming time in west-central Mississippi. The fruit ripens in late autumn in heads 5/8 to 3/4 inch in diameter.

**Site preference and range.**--Buttonbush grows well on heavy soils in wet sites. Its most common habitat is the margin of river-bottoms, swamps, ponds, and drainage ditches. It is widespread over the eastern United States.

**Importance in forest management.**--Under established stands this shrub is held in check by the overhead shade. In openings, especially after fires, it often forms a dense mat 3 to 3-1/2 feet deep that shades out most reproduction and deforms whatever seedlings may push up through it. Fire does not kill it, for it sprouts prolifically. Chemicals such as 2,4-D and 2,4,5-T have likewise been unsuccessful. If the sites are not too wet, the best control probably is thorough disking before natural seeding or planting, followed by cultivation of plantations during the first season to keep down sprouts.



Branch with leaves  
and flowers.



Growth habit



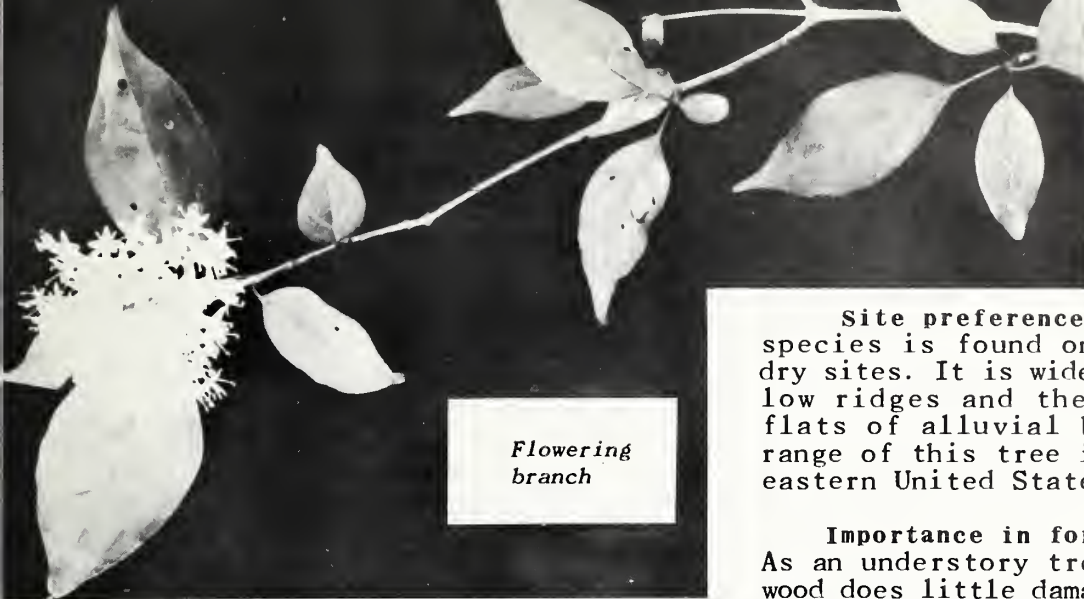
Seed

Mature fruit



## ROUGHLEAF DOGWOOD

Family Cornaceae  
*Cornus drummondii*



Flowering  
branch

**Description.**--Although usually a small tree, roughleaf dogwood sometimes attains heights of 40 to 50 feet and diameters of 8 to 10 inches on the most favorable bottomland sites.

The trunk is short and the branches form a narrow, irregular, open head. New branches are light green in their first year, changing later to light reddish brown and finally to light gray-brown. The bark is divided by shallow fissures into narrow ridges with closely appressed dark red-brown scales. The leaves are opposite, 3 to 4 inches long and 1-1/2 to 2 inches wide; the tip is prolonged. They are dark green, roughened above by short white hairs, and pale below. The midrib is thin and 4 to 6 pairs of veins run roughly parallel with the edge of the leaf. The white flowers appear when the leaves are nearly fully grown, usually in mid-May in west-central Mississippi. Flower clusters are 1-1/2 to 2-3/4 inches wide with individual flowers about 3/8 inch across. The fruit is a small white drupe that is 1/4 inch in diameter and contains 1 or 2 seeds.

**Site preference and range.**--This species is found on rather poor or dry sites. It is widely distributed on low ridges and the better-drained flats of alluvial bottomlands. The range of this tree is throughout the eastern United States.

**Importance in forest management.**--As an understory tree roughleaf dogwood does little damage in established stands, and can be left as a source of food for wildlife. Reproduction is rather sparse, but in open areas on suitable sites it can easily take over to the exclusion of commercially important trees.

Control measures include disking to destroy young dogwoods, and cutting and chemically treating larger ones.

Growth habit



Flower





## AMERICAN ELDER

Family Adoxaceae  
*Sambucus canadensis*

*Flowering branch*

**Description.** -- Its white flowers and purple fruits, both in umbrella-shaped clusters, are the outstanding features of American elder.

This shrub usually varies from 3 to 15 feet tall but frequently reaches tree size, 30 feet tall and 2 feet in diameter, in the South. The pinnately compound leaves are 4 to 10 inches long with 5 to 11 non-hairy leaflets 2 to 4 inches in length. Leaflets are finely saw-toothed on the edges, dull green on the upper surface and lighter below. Leaf arrangement is opposite. The broad clusters of small, fragrant flowers are 4 to 6 inches across and bloom from early June through August in west-central Mississippi. The fruit is a purplish-black, fleshy, berry-like drupe about  $\frac{3}{16}$  inch in diameter, containing 3 or 4 small seed-like nutlets.

**Site preference and range.** -- American elder occurs on a variety of soils and sites but is most common on moist to wet, fairly well-drained sites in the bottomlands. It ranges throughout the eastern United States and beyond.

**Importance in forest management.** -- It reproduces readily and, because of its spreading growth, prevents the development of tree seedlings. Where tree reproduction is desired, elder plants should be frilled and treated with chemicals. Otherwise they can be left for their aesthetic value and the usefulness of their fruit to wildlife.



*Growth habit*



*Ripe fruit*





## HAWTHORN

Family Rosaceae  
*Crataegus* sp.



*Leaves*

**Description.**--The hawthorns are conspicuous for their usually scaly bark and their attractive white flower clusters in early spring.

There are several species, both shrubs and trees. All are very difficult to distinguish but none are commercially important. Usually they have crooked, thorny branches. The bark is light tan to cinnamon colored and scaly. The dark yellow-green leaves are alternate, simple, serrate, and 1-1/2 to 3-1/2 inches long by 3/4 to 1-1/2 inches wide. The flowers appear in April in west-central Mississippi. The fruit is a pome with 1 to 5 bony nutlets, usually 1-seeded.

**Site preference and range.**--Hawthorn occurs on almost all soils but in the alluvial bottomlands is limited to the well-drained flats and ridges. It is very tolerant of shade and is scattered in the understory, but may make a thicket in openings. Its range covers the eastern United States.



*Flowering branch*

**Importance in forest management.**--Hawthorn flowers have aesthetic value, and the fruits provide food for wildlife. Where they are interfering with tree regeneration, young hawthorn thickets can be bulldozed, and trees can be frilled and treated with chemicals.

## AMERICAN HOLLY

Family Aquifoliaceae

*Ilex opaca*

Leaves



Branch with fruit



**Description.**--Shiny, evergreen leaves and the bright red berries it bears in the winter distinguish the American holly.

This tree is usually short-boled and confined to the understory of timber stands, but it often reaches diameters of 2 to 3 feet and heights of 50 feet or even 100 feet. It has a narrow pyramidal head formed by short slender branches. The limited supply of wood goes into specialty uses and the fruit-bearing branches are in demand for Christmas decorations. The bark is about 1/2 inch thick, light gray, and with small wart-like growths. The evergreen leaves are elliptic with

undulating margins bearing small spines about 2/10 inch long. They are yellow-green and about 2 to 4 inches long with a prominent midrib and veins. The small, white staminate and pistillate flowers are borne on separate trees. The fruit is a globose red drupe 3/8 inch in diameter.

**Site preference and range.**--Holly is usually found on sands or sandy loams and on moist sites in the alluvial bottomlands. Elsewhere it occurs principally in minor stream bottoms. Its range is throughout the eastern United States, excluding the New England States north of Massachusetts.

**Importance in forest management.**--In some areas holly occupies space that could be used by species of greater commercial value. Because of its tolerance for shade it readily becomes established in the understory and may interfere with other reproduction as the overstory is removed. Since holly has an important aesthetic value, however, it should be spared wherever possible. It can be killed by applying 2,4,5-T solution in a frill.



## FALSE INDIGO

Family Leguminosae  
*Amorpha fruticosa*

*Flowering  
branch*

*Fruiting  
stem*

**Description.**--False indigo, sometimes locally called leadplant, is conspicuous in the spring for its spikes of small purple flowers with golden stamens.

This shrub grows 12 to 15 feet tall. Its branches and leaves are covered with short gray hairs. The leaves resemble those of black locust. They are 4 to 7 inches long and pinnately compound, with 13 to 30 leaflets. The leaflets are 1/2 to 1-1/4

inches long by 1/4 to 5/8 inch wide and marked with minute dots. The flowers are in erect cylindrical clusters 4 to 6 inches long and bloom in May and June in west-central Mississippi. The fruit is a 1- to 2-seeded pod about 1/4 inch long.

**Site preference and range.**--False indigo generally favors the heavier soils in moist sites. In the Mississippi River bottomlands it is very common in the batture lands around borrow pits and the smaller drainage courses. It ranges from northern Florida to Louisiana, and north through the Central States.

**Importance in forest management.**--It forms rather large, dense thickets that interfere with tree reproduction, but no attempts at control have been reported. Methods other than disking or bulldozing would be expensive because of the many small stems.

# PALMETTO

Family Palmae  
*Sabal minor*

*Growth habit*



*Leaf blade*

**Description.**--Palmetto is easily recognized by its broad fan-shaped leaves.

This plant is an evergreen perennial. On dry sites it is "stemless"--that is, the stem remains buried in the ground. On most alluvial soils it produces a trunk that is normally 2 to 3 feet high and sometimes reaches 6 to 8 feet. The green, nearly round leaves are 1 to 3 feet wide with petioles up to 3 feet long; they have 32 to 50 segments. The small, whitish, very numerous flowers appear on stalks up to 10 feet tall from May to July in west-central Mississippi. The fruit is a black globose drupe about 1/3 of an inch in diameter and mostly one-seeded.

**Site preference and range.**--Palmetto grows on any soil. It occurs on dry sandy sites in the pine lands but makes the largest trunk growth in the shade on alluvial soils that are swampy or subject to some flooding. It may invade pastures and even cottonfields. Its range is from Georgia to Texas, and north to South Carolina and eastern Arkansas.

**Importance in forest management.**--Though this plant is much browsed by cattle and wildlife, it frequently forms dense thickets that interfere with the natural restocking of woodland areas.

Applying kerosene to the growing tip has been reported as a successful control measure. Disking eliminates it temporarily but sprouting is prolific and many of the chopped-up pieces of stem root to form new plants. Repeated diskings are necessary in plantations until the trees outgrow the competition.





## PLANERTREE

Family Ulmaceae  
*Planera aquatica*



*Flowering branch  
with young leaves*

**Description.** --The most conspicuous characteristic of the planertree is its leaves, which are miniature copies of those of the American elm.

Although this tree--sometimes called water elm--occasionally attains a height of 40 to 50 feet and a diameter of about 2 feet, it is usually a small bushy tree with slender, spreading branches that often form a low broad crown. The branches are brown tinged with red when they first appear, red in the first winter, and finally reddish brown or ashy gray. The small simple leaves are alternate, pinnately veined, and slightly serrate. They are ovate to elliptic-lanceolate, 2 to 3 inches long and 3/4 to 1 inch wide. The flowers, which appear with the leaves during March in west-central Mississippi, are inconspicuous. The staminate blooms develop along the branchlets and the pistillate ones in the leaf axils. The fruit, which ripens in April, is an oblong drupe about 1/3 of an inch long with irregular soft projections.

**Site preference and range.** --Planertree grows on the heavier clays and prefers sites covered with water for a portion of the year. In the Mississippi River bottomlands it is widely distributed in swamps, deep sloughs, and low, poorly drained flats. It ranges from northern Florida to Texas, and north to North Carolina, Kentucky, and southeastern Missouri.

**Importance in forest management.** --Because of its spreading crown, the planertree interferes with the growth and reproduction of commercially important species. It can be controlled either by bulldozing or with 2,4,5-T in frills.

*Growth habit*

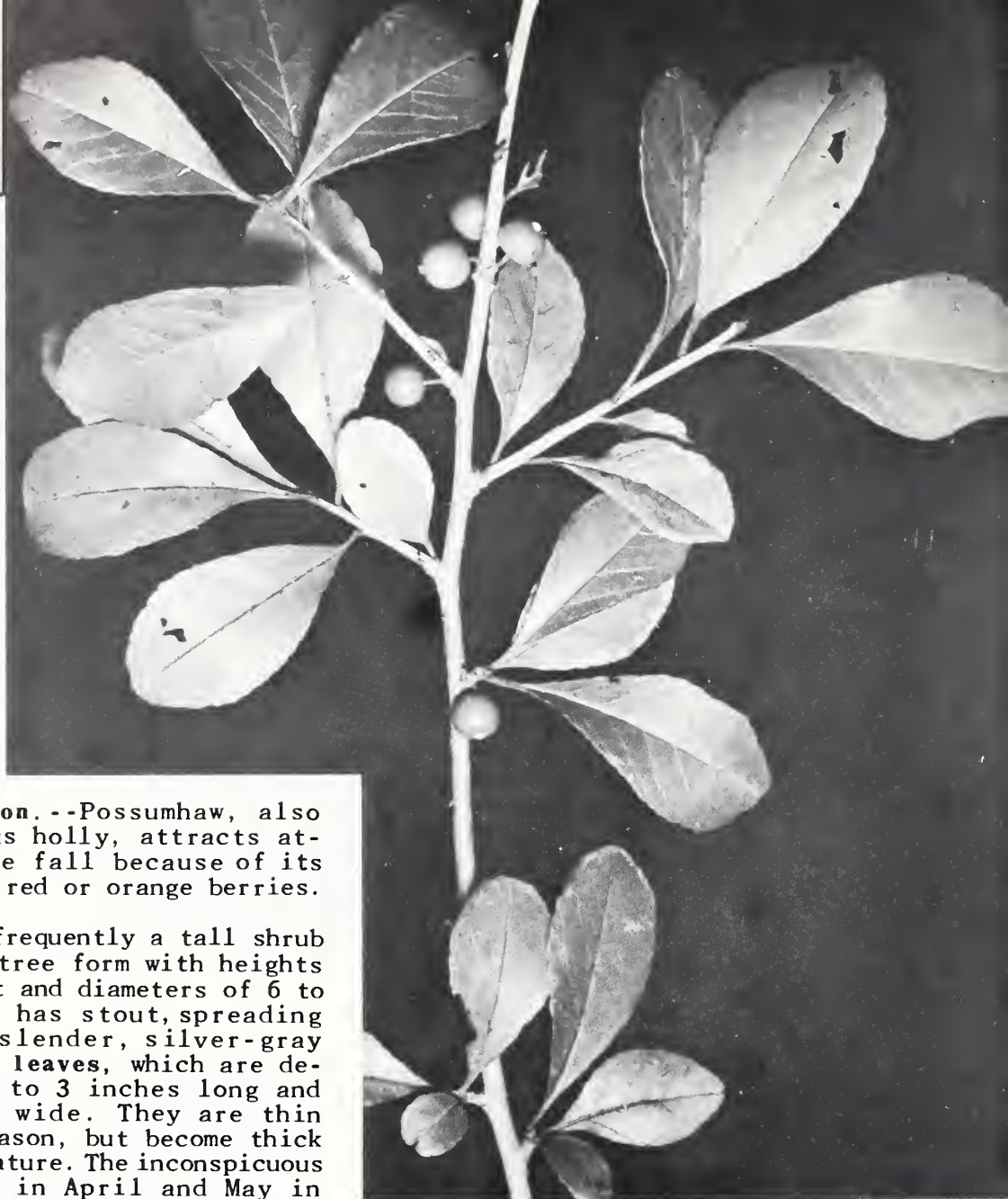




## POSSUMHAW

Family Aquifoliaceae  
*Ilex decidua*

*Fruiting stem*



**Description.**--Possumhaw, also called deciduous holly, attracts attention in late fall because of its abundant bright red or orange berries.

It is most frequently a tall shrub but may attain tree form with heights of 20 to 30 feet and diameters of 6 to 10 inches. It has stout, spreading branches and slender, silver-gray branchlets. The leaves, which are deciduous, are 2 to 3 inches long and 1/3 to 1 inch wide. They are thin early in the season, but become thick and firm when mature. The inconspicuous flowers appear in April and May in west-central Mississippi and are crowded at the end of the lateral branches of the previous season. Occasionally they occur solitarily on the branches of the current year. The red or orange fruit is globose and about 1/4 inch in diameter. It frequently persists until after the new leaves appear in the spring.

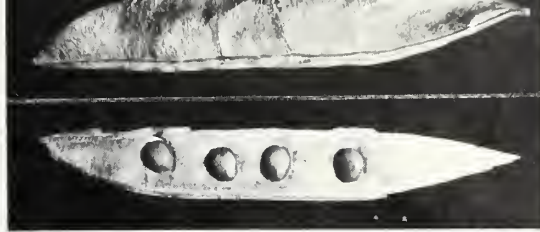
**Site preference and range.**--Possumhaw generally grows on the heavier soils in low, moist locations such as the flats of alluvial areas and along the borders of streams and swamps. Its range is throughout southern United States and as far west as Oklahoma.

**Importance in forest management.**--Possumhaw varies in growth habit from individual trees and small clumps to extensive thickets that crowd out the reproduction of desirable species of trees.

It can be controlled with an ax or by applying a basal spray of 2,4,5-T in diesel fuel--the chemical reduces sprouting after treatment. As the fruit is eaten by birds, it may be desirable to leave trees where they do not interfere with forest management.



*Seed pod*



## EASTERN REDBUD

Family Leguminosae  
*Cercis canadensis*

**Description.**--The eastern redbud--sometimes called Judas-tree--is conspicuous for the pink flowers it bears in early spring.

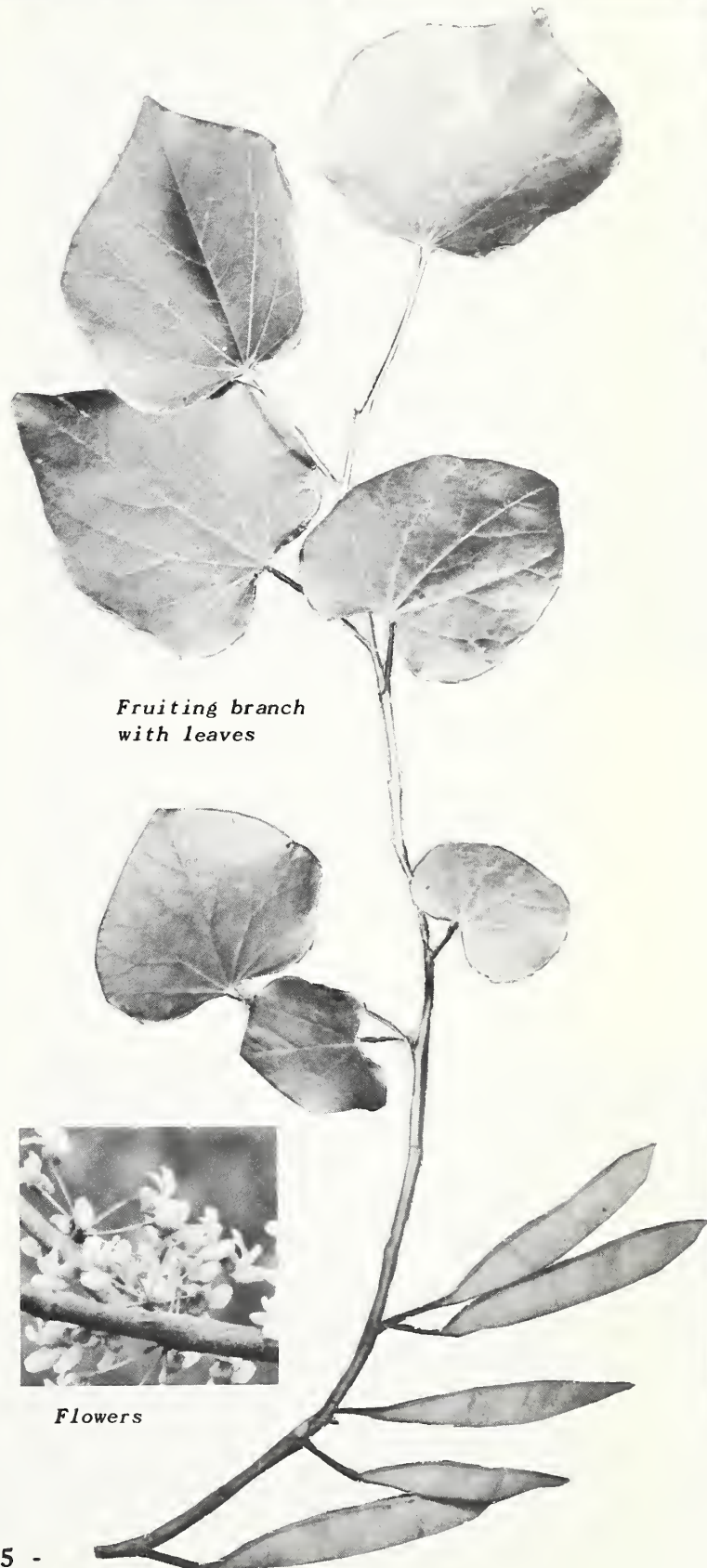
It is a small understory tree, rarely growing more than 40 to 50 feet tall. The trunk separates into stout branches at 10 to 20 feet above the ground, so that the tree often develops a wide, flat crown.

The new branches are brown and shiny during their first season, changing to grayish-brown later. The bark of the trunk is reddish-brown, with deep longitudinal fissures that divide it into narrow plates. The heart-shaped glossy green leaves are 3 to 5 inches long and wide. The flowers, which range from light pink to purplish, appear in clusters along the branches, usually just before the leaves unfold. Late March is blossoming time in west-central Mississippi.

The fruit is a many-seeded red-brown pod about 3 inches long. In the South the pod is fully grown by late May, but often persists until early winter, or even longer. When ripe, seeds are brown and about 1/4 inch long.

**Site preference and range.**--In the bottomlands this tree prefers the less frequently flooded slack-water areas and the Brown Loam bluffs. It occurs in uplands and bottomlands throughout most of the eastern United States. In the South it is found throughout Tennessee and Arkansas, in all but the coastal fringe of Alabama and Mississippi, in northern Louisiana, and in eastern Oklahoma and Texas.

**Importance in forest management.**--In established stands it can usually be left for its aesthetic value. Where reproduction of commercially important species is desired, its spreading crown, in combination with other low shade, may be a serious handicap. It should then be frilled and perhaps also treated with chemicals.



*Fruiting branch  
with leaves*



*Flowers*



## SMOOTH SUMAC

Family Anacardiaceae  
*Rhus glabra*

Growth  
habit

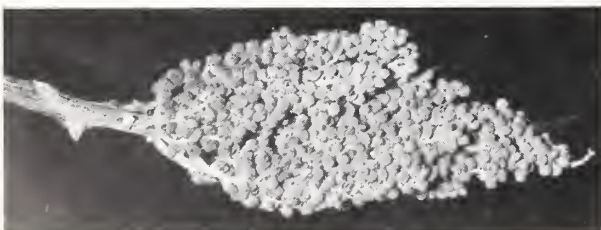


**Description.**--Smooth sumac is most conspicuous for the large red-brown fruit clusters it bears in late summer.

The species described here is the most common in the bottomlands, but several others are found, all similar in appearance. This small shrub has smooth stems and grows from 2 to 10 feet tall. The leaves are pinnately compound and from 18 to 24 inches long. There are 11 to 31 leaflets from 2 to 6 inches long and with serrated edges. The upper surface is yellow-green and the underside distinctly whitish. The flowers are mostly of a single sex, white to greenish-white. Those developing into fruit are usually more compact than the others. They appear in June to July in west-central Mississippi. The fruit, a small globular dry drupe covered with crimson hairs, is borne in dense panicles 6 to 8 inches long and 2 to 3 inches wide.

**Site preference and range.**--Sumac grows on all but the heavier clay soils and prefers well-drained and dry sites. In the Mississippi River bottomlands it occurs along river, creek, and drainage ditch banks as well as on the better drained flats and ridges, where in abandoned fields or woods openings it frequently forms thickets. It is found in almost every State in the Union.

**Importance in forest management.**--Sumac is troublesome in forest management mainly because it occupies space that could be used more profitably by other species. It rarely is a hindrance to tree reproduction except when it occurs in dense thickets. The most practical control is to bulldoze areas of young sumac, and frill and treat larger plants with chemicals to prevent sprouting.



Fruit

Fruiting branch





**SWAMP-PRIVET**Family Oleaceae  
*Forestiera acuminata*

## Growth habit



**Description.**--The most conspicuous characteristic of swamp-privet is the wide-spreading and often drooping habit of its crown.

It is a small tree, usually 10 to 20 feet tall. Occasionally it reaches 50 feet in height, with a short trunk 8 to 10 inches in diameter. Its slender branches are light brown, becoming darker in the second year. The deciduous leaves are opposite and elliptic, yellow-green on the upper surface and lighter below. They vary from 2-1/2 to 4-1/2 inches long by 1 to 1-1/2 inches wide. The flowers, which appear before the leaves in April and May, are inconspicuous; the pistillate ones occur in several-flowered clusters about 3/4 to 1-1/4 inches long. The fruit is a dark purplish drupe 1 to 1-1/4 inches long which falls as soon as ripe in June and July.

**Site preference and range.**--This tree occurs on the heavier soils and the wetter sites along river banks, shallow sloughs, ponds, and swamps. On the low, wet flats in the Mississippi River bottomlands it frequently forms dense, nearly pure, stands referred to as privet flats. Its range is from Florida to Texas, and north to South Carolina and the southern portion of the Central States.



**Importance in forest management.**--Swamp-privet shades out new growth and overtops and crowds out advanced reproduction. It must be eliminated before commercially important species can replace it. It can be controlled either by bulldozing or by spraying the basal portion of the trunk with 2,4,5-T. Where natural regeneration cannot be relied on, these treatments must be followed by planting with desirable species suited to the site.

Flowering branch



## GLOSSARY

- Achene.** A small dry and hard 1-locular 1-seeded indehiscent fruit, like the individual fruits of *Ranunculus*.
- Alternate.** Said of leaves, etc.--not opposite to each other on the axis, but borne at regular intervals at different levels.
- Annual.** Of only one year's duration. Winter-annual, a plant from autumn-sown seed which blooms and fruits in the following spring.
- Appressed.** Lying close and flat against.
- Axil.** The angle formed between any two organs.
- Axillary.** In or related to the axis.
- Berry.** A pulpy fruit with immersed seeds, as the grape, cranberry, etc.; loosely extended to cover other fleshy fruits, such as the strawberry (ripened receptacle), raspberry (coherent drupelets).
- Blade.** The expanded portion of a leaf.
- Cambium.** A layer, usually regarded as one cell thick, of persistent meristematic tissue (referring to vascular and cork cambia); or a persistent meristematic layer which gives rise to secondary wood and secondary phloem (vascular cambium).
- Capsule.** A dry dehiscent fruit composed of more than one carpel.
- Catkin.** A dry scaly spike, usually unisexual, such as the flower of willows, birches, etc.
- Compound.** Composed of 2 or more similar parts united into one whole. **Compound leaf,** one divided into separate leaflets.
- Deciduous.** Not persistent; not evergreen.
- Drupe.** A fleshy or pulpy fruit with the inner portion of the pericarp (1-locular and 1-seeded, or sometimes several-locular) hard or stony.
- Drupelet.** A diminutive drupe, as in a raspberry or blackberry.
- Entire.** Without toothing or division.
- Forb.** Any herb other than grass.
- Globose.** Globular; spherical.
- Herb.** A plant with no persistent woody stem above ground; also plants used in seasoning or in medicine.
- Herbaceous.** Having the characters of an herb; leaf-like in color and texture.
- Lanceolate.** Shaped like a lance-head, several times longer than wide, broadest toward the base and narrowed to the apex.
- Leaflets.** A single division of a compound leaf.
- Lobed.** Divided into or bearing lobes.
- Legume.** The fruit of the *Leguminosae*, bilaterally symmetrical and produced from a unilocular ovary, 1- to many-seeded, variously dehiscent or indehiscent and in some groups articulated into one to several 1-seeded portions.
- Midrib.** The central or main rib of a leaf or similar structure.
- Nut.** A hard, indehiscent 1-seeded fruit.
- Nutlet.** A diminutive nut.
- Opposite.** In pairs; said of leaves, branches, or flowers that are opposite each other on either side of an axis.
- Ovate.** Egg-shaped; having an outline like that of an egg, with the broader end basal.
- Ovoid.** A solid with an ovate outline.
- Panicle.** A loose irregularly compound inflorescence with pedicellate flowers, such as a branched raceme or corymb.
- Perennial.** Lasting year after year.
- Petiole.** The support (foot-stalk) of a leaf.
- Pinna (pl. pinnae).** One of the primary divisions of a pinnate or compoundly pinnate frond or leaf.
- Pinnate.** Compound with the leaflets arranged on each side of a common axis.
- Pistillate.** Provided with pistils, and, in its more proper sense, without stamens.
- Pome.** A fleshy fruit of which the apple is the type, formed from an inferior ovary with several locules.
- Prickle.** A small and more or less slender sharp outgrowth from the epidermis.
- Serrate.** Having sharp teeth pointing forward.
- Sessile.** Without stalk of any kind.
- Shrub.** A woody perennial, smaller than a tree, usually with several stems.
- Simple leaf.** Not divided into separate leaflets.
- Spike.** A form of simple inflorescence with the flowers sessile or nearly so upon a more or less elongated common axis.
- Spine.** A sharp woody or rigid outgrowth from the stem or leaves.



**Staminate.** Having the pollen-bearing organs of the flower.

**Tendrill.** A slender clasping or twining cauline or foliar outgrowth.

**Tree.** Perennial woody plant with an evident trunk.

**Undulate.** With a wavy surface margin, repand.

**Valve.** One of the pieces into which a capsule splits; the partially detached lid of an anther.

**Veins.** Threads of fibrovascular tissue in a leaf or other organ, especially those which branch (as distinguished from nerves).

**Vine.** Any plant whose stem requires support, and which climbs by tendrils or other means or which trails or creeps along the ground. Also the stem of such a plant.

## REFERENCES

- Bailey, L.H.  
1935. *The standard cyclopedia of horticulture*. Re-issued with corrections. 3,639 pp., illus. New York.
- \_\_\_\_\_ and Bailey, E.Z.  
1930. *Hortus*. 652 pp., illus. New York.
- Bomhard, M.L.  
1950. *Palm trees in the United States*. U.S. Dept. Agr. Agr. Inform. Bul. 22, 26 pp., illus.
- Brown, C.A.  
1945. *Louisiana trees and shrubs*. La. Forestry Comm. Bul. 1, 262 pp., illus.
- Fernald, M.L.  
1950. *Gray's manual of botany*. Ed. 8, 1,632 pp., illus. New York, Cincinnati [etc.].
- Langdon, O.G., Bomhard, M.L., and Cassady, J.T.  
1952. *Field book of forage plants on longleaf pine-bluestem ranges*. U.S. Forest Serv. South. Forest Expt. Sta. Occas. Paper 127, 117 pp., illus. [Processed.]
- Little, E.L., Jr.  
1953. *Check list of native and naturalized trees of the United States (including Alaska)*. U.S. Dept. Agr. Agr. Handb. 41, 472 pp.
- Putnam, J.A.  
1951. *Management of bottomland hardwoods*. U.S. Forest Serv. South. Forest Expt. Sta. Occas. Paper 116, 60 pp. [Processed.]
- \_\_\_\_\_ and Bull, Henry  
1932. *The trees of the bottomlands of the Mississippi River Delta region*. U.S. Forest Serv. South. Forest Expt. Sta. Occas. Paper 27, 207 pp., illus. [Processed.]
- Sargent, C.S.  
1926. *Manual of the trees of North America (exclusive of Mexico)*. Ed. 2, 910 pp., illus. Boston and New York.
- Van Dersal, W.R.  
1938. *Native woody plants of the United States, their erosion-control and wildlife values*. U.S. Dept. Agr. Misc. Pub. 303, 362 pp., illus.





